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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,691	03/16/2004	Warren Thomas Johnson	USFMCR.134C1	3782
20995	7590	12/23/2004		
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER DRODGE, JOSEPH W	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/802,691	Applicant(s) JOHNSON ET AL.	
	Examiner Joseph W. Drodge	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0304</u> . | 6) <input type="checkbox"/> Other: ____. |

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Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In independent claims 1,7 and 12 it is unclear whether "module" encompasses structure other than the membranes themselves such as the upper and lower header, especially in view of claims 2,8 and 14 "into the module".

Within claim 7, "in the module beneath the membrane" lacks antecedent basis for for a separate module underneath the membrane module.

In claims 5, 10 and 17 "high velocity" is not defined and it is unclear whether "high velocity sweep" is a separate method step from the "sweeping" of the independent claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Zha et al patent 6,555,005, of record.

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Zha et al disclose membrane module 4 comprising arrays or bundles of hollow fiber wall membranes extending between upper potting head 6 and lower potting head 7, the latter having at least aeration holes 10 (column 4, line 66-column 5, line 13), the lower potting head having additional holes for porous tubes 16 for air distribution (column 7, lines 25-34). Feed containing contaminant is through a lower inlet of the surrounding vessel, filtration is periodically interrupted with cleaning, backwashing, scouring and sweeping steps wherein air bubbles are swept along both inner and outer surfaces of the membrane bundles (column 9, lines 5-17 and column 6, lines 51-65).

For claims 1 and 7, sweeping of solids is alongside/parallel to the membranes with solids-containing concentrate removed through the same openings where some of the air bubbles are introduced (column 7, lines 25-44, especially lines 39-44).

For claim 12, solids may also or alternatively be dislodged into the liquid surrounding the bundles for later removal as in column 6, lines 63-65.

For claim 2, figure 5 shows a lower feed opening and withdrawal of filtrate/permeate through the upper header to a permeate collection tank.

For claims 3,8 and 14, bubbles pass along both inner and outer surfaces of the membranes (column 8, line 58).

For claims 4,9,15 and 16, concurrent sweeping and cleaning is found at column 9, lines 10-16.

For claims 5,6,10,11,17 and 18, sweeping may be of higher pressure with the aid of a pump (column 6, lines 56-58).

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Claims 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kopp et al patent 5,543,455, also of record.

Kopp et al disclose, especially in the figure 18-21 embodiments, filtration with membrane module(s) 102 comprising upper and lower headers to suspend membranes in liquid in a vessel, with filtration periodically interrupted with backwash, cleaning and sweeping steps to dislodge contaminants from the membrane walls into surrounding liquid in the vessel/tank for later removal (especially column 15, line 54-column 16, line 8). For claims 14-16, concurrent backwashing cleaning with liquid and introduction of air containing bubbles to scour is found at column 15, lines 41-44. For claims 17 and 18, the sweeping may be of relatively high velocity when the pump discussed among column 16, lines 45-53 is utilized.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

December 21, 2004


JOSEPH DRODGE
PRIMARY EXAMINER